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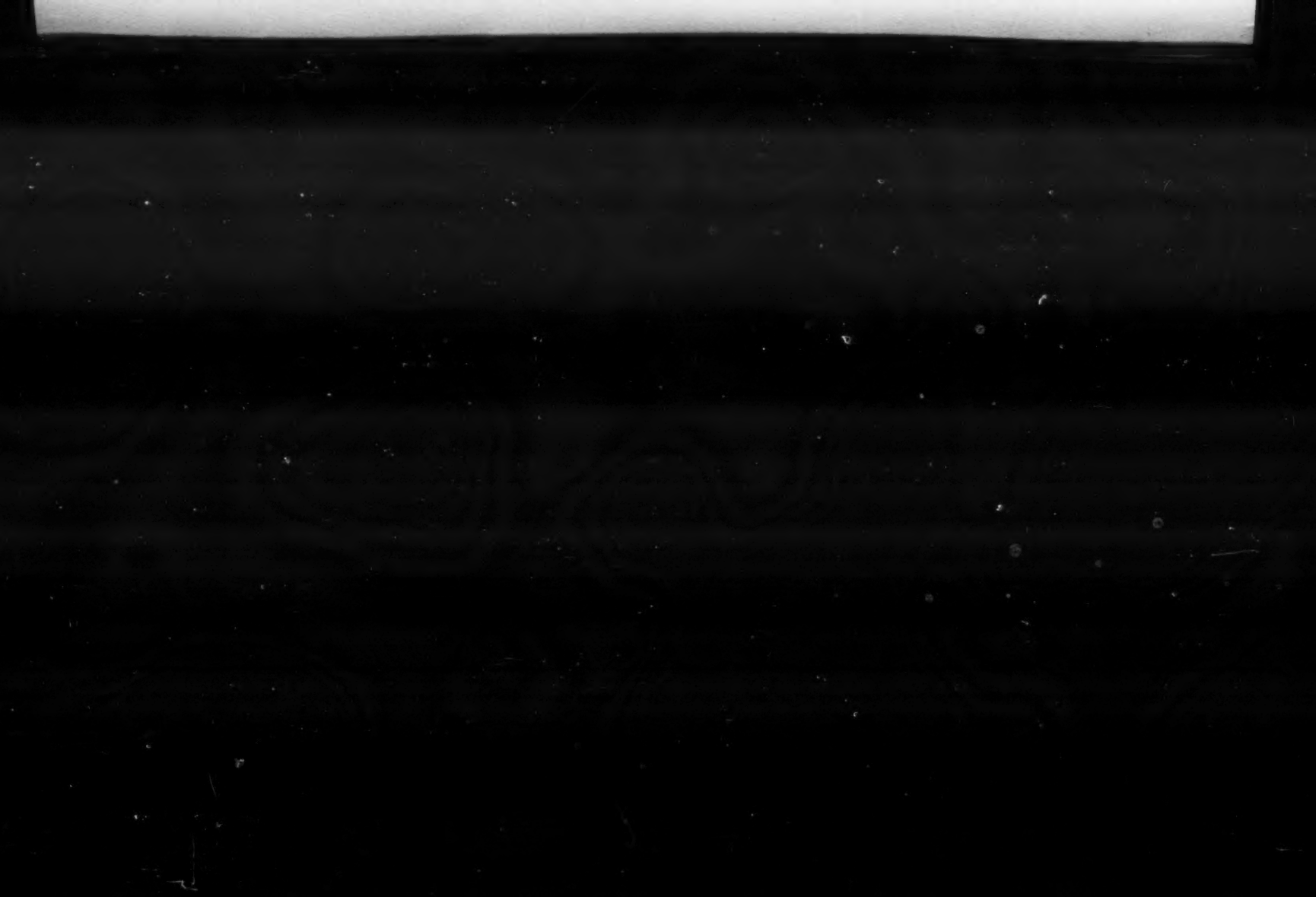

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THE
American Antiquarian

Vol. XXXVI. JANUARY, 1914 No. 1

Infinities Piled On Infinities

By Edgar Lucien Larkin.

WITHIN all historic ages, mentalists have ever made use of different methods in their interminable search after the absolute. To this long time venerable word, seen on almost every page of philosophic books, I wish to add the word Mind. The perpetual search is therefore after Absolute Mind. And I propose to place in outline a few of these plans only matured in recent years. Exploration in the potential possibilities, and in actual achievements of the kind, type of quality of mind now phasing in the brain of man, leads to several startling generalities and deductions. Sublime heights are encountered and scaled, and other mountain peaks of pure intellect are seen standing amid unexplored mists on all sides.

Really, there can be but one Infinite Mind, so it seems, from the meaning of the word: but to each lower stage, the next one above appears to be bordering on infinity. That is to our mentalities, this Absolute has potency and power to present itself as infinite. This word infinite, among modern researchers, has assumed highly important analytical uses, and many discoveries have been made by employing it in exploring. Some of these discoveries may be deceiving us, but the highest seems to be prophetic of a trace of an obscure clue leading possibly to the simplest attribute, to the real nature of the dimmest boundary of Mind; if, indeed, Mind has a limiting curve, even mind in the highest man.

It has been said, since ancient Aryan pre-Hindu days, since

the times of Badarayana, and Kapila, that a line can be infinitely long. True, but the highest of high modern mathematics cannot sense it; nor use it in the extreme heights of compilation. And a line conceived by a non-mathematician to be infinitely short cannot be demonstrated by a mathematician. Thus divide a line one inch long into 12,700,000,000,000 parts, they are short indeed but not infinitely short—they are the diameter of electrons, and these exist. In the language of researchers, it is said, electrons are next to the infinitely small. But to the present mind-power of these explorers, an electron is practically infinitely minute because they are unable to think how small it is, yet they can weigh it. See my article on the isolation of the electron in Nov., 1912, "Harbinger." Then the electron is beyond the limit of the thought of man in its existing state of evolution to the highest. This for minuteness; now let us think, if we can, of a great magnitude. Light is known to move in free space with the fixed and set specific speed of 186,380 miles during each second of time. Let it move during 100 years, then the length of the line traversed will be to our mind practically infinite because we cannot grasp such a magnitude; but it is not infinite, because there are hundreds of thousands of **suns** sunk in space deeps, so far that their light requires more than a century to reach the earth. Really, the distance moved over by light in one year cannot be sensed, not even by a mathmatician who deals in immense numbers.

Let a brilliant body dash in black space where the eye can see the motion during one second at a rate of 186,380 miles per second; then the eye would see the flash and the speeding mass. Yet, the mind of man, not even the mighty mind of M. Henri Poincare, the Master Mathematician, would be able to grasp, in all its entirety, this terrific velocity. This mathematician, whom all others have adored for years, died only a few months since in France, greatly missed by the entire scientific world. He was indeed beloved and honoured, for only a few very high mathematicians could think over again the exalted thoughts that he originated. Then this velocity of light is, for all present mentalities, practically infinite. And let the flying light pass before our eyes during its flight over one mile. Then the time of passing would be 1-186,380th part of one second. And not even Poincare could think of this excessively minute fraction of a second. Stupendous questions arise, is the personality—Poincare—at this moment, in another realm, digging, delving and exploring the very deeps of those mighty equations he solved

here? He used the word Creator in his mighty books. But to one who has never secured a glimpse of how an electron was weighed, or how the speed of light was measured, the minds of these workers appear to be infinite, or next to the infinite. The fact is, these Master Minds are practically infinite to the non-mathematical minds of hundreds of millions of humans. Yet, death hovers around and about these Masters, and the blazing light of their intellects grows dim, then fainter and expires. The formidable equations of a Poincare, of a Newcomb, no longer astonish all other mathematicians. The task of separating but one electron, of weighing it, and of finding its potential was more arduous, exacting, sublime and transcendent than that of measuring the velocity of radiant energy of which light is one phase. Thus electrons, the speed of energy, and space traversed in only one second of time, are to us very close to infinity.

Suppose a human in a normal mental and physical state could go out into space, say, 30,000 miles, and be stationed there at rest. Then let him see the incredibly amazing apparition of the earth pass by at its set rate of 18½ miles per second. He would be so astonished that he would be filled with ideas that to him would seem to be infinite. He would think that the men able to measure this velocity bordered on infinity, and he would be correct. But there is a greater than the natural eye. There is an eye that can become aware that during each second in the years, the rate of motion of the earth varies, because the orbit of the earth around the sun is not an exact circle. This next to all-seeing eye is methematics, beside which all other things human dwindle into insignificance. This eye, this window open to a master mind, can detect and actually measure the amount of variation of the earth's motion on its gigantic pathway. Likewise, the variation in distance of the earth from the sun during each second can be accurately computed, that is—measured. Suppose two warm friends were walking along the street in conversation on familiar things; one of the friends being a Man of a Master Mind, that is a very high methematician, and the other non-mathematical. And let their talk revert to mathematics; then if such a thing could be within range of human possibility, that the mathematician came to be able to show his friend one real momentary glimpse of the deeps within; the friend would be so utterly astounded that he would stop still as if petrified. This mentological experiment could not be, however. The friend would have to put in many years in rigid study before the glimpse could flash like the very lightnings within his mind. All planets vary in rates of motion around their

suns, and all moons vary in their speeds around the planets. But far more magnificent; all suns whatever, that is, all stars, for every star is a white hot colossal sun; all these stellar hosts by hundreds of millions likewise vary in their speeds in space. In many cases, these rates are measured by means of that almost supreme wonder of Man—the mystery and marvel of science, the tell-tale, all-potent instrument, the tele-spectroscope. It reveals the alphabet of Nature. And the discovery and the manipulation of this piece of mechanism, the crowning triumph of human genius, is a near infinity all by itself. Thus let a sensitive and refined personality be near a skilled modern spectroscopist, and let him exert all his mind powers, so that finally he, too, could secure a transitory glimpse of the mind blazing and glowing within the brain, then he also would be filled with amazement. And if he was sufficiently trained he would sense the presence of a near infinity. Any motion within the range of our vision is majestic; there is scarcely anything more fascinating than to watch moving things, as trains, ships, waves, wheels, falling bodies, projectiles, and pendulums. Thus the motion of the compensated seconds pendulum up here in the sidereal time clock is impressive, and more impressive at midnight within silent, within the witching hour, within the negative or night hemisphere of the University of Nature, than at positive noon. Thus the wonderful concept in the mind—rates of motion, rates of change of motion and of maxima and minima of speed—these most alluring and pleasing problems of mentalism are all exemplified in the oscillations of the pendulum. Starting from highest displacement, it descends on its arc of a circle, ever faster and faster, reaches its lowest point, and then ascends until it actually stops, and descending, reaches the opposite height. Now the mystical variation of rates of motions are involved in the swinging pendulum to perfection. By taking accurate seconds pendulums, exact at one locality to others in many parts of the world, variations in rates are detected. From these data variations in the force of gravitation are detected, and from these added data the mathematically exact shape of the entire earth is learned—all its variations and deviations from sphericity. In fact, variations in speeds, forms, rates and motions are sufficient to give origin to a very magnificent department of human knowledge. Variation of rates of oscillations, flows, potentials and pressures in electricity is a science of vast magnitude and complexity. What forces are pent up in static electricity, and what in rates of flow, are all known to the peculiar type of mathematics bearing on these problems that now tax human skill.

Take a stone into space deeps to an infinite distance from the sun, and let it fall, that is, release it or let it go where it will. Then one of the most fascinating side studies in astronomy will be required to comprehend subsequent events. Thus take the stone to an infinite distance, then the attraction of the sun upon it will be infinitely weak. For the purpose of this curious study, let us imagine that all else save the sun and stone are annihilated. The stone will become a falling body, and fall on a straight line toward the sun if supposed to be at rest. But the minds of those trained to the highest are at a loss how to proceed in this analysis. Thus if the distance of the stone from the sun is infinite, the gravitation exerted by the sun will be infinitely weak, and the stone will start to fall with an infinitely slow rate. But this is a misuse of words, or seems to be, for infinitely slow possibly means rest. The special attention of the reader is here called. The very base of all human logic is here involved, for we are now wandering in a space in search after the Absolute, an absolute beginning of motion. The question is vital to all problems in the reason of man. By looking closely into this remarkable concept, we see that we must decide about rest and motion. The decision is inevitable, we have not found the Absolute, for infinitely slow is not absolute rest. The word slow is used. If the stone fall through one inch in a time measured by one trillion of our infinitesimal years, there is motion. Then gravitation would not be infinitely weak. The fact stands out: rest absolute can only obtain when one body is in existence. Then the mind in man as it now manifests is at a limit because it cannot think of rest without comparing it with motion and vice versa. Let two masses separated by space exist, then gravitation and motion will both appear. But the line joining the sun and stone in the case under consideration would not be infinitely long, because it would have two ends. For a line infinitely long cannot have any ends, not even one. And this is beyond our existing powers of thinking. Some minds may think that infinitely slow means rest; but instead, let it be said that infinitely slow is next to absolute rest, and that the motion is slower than can be measured by any assignable set of figures expressing the rate per second. If we say this, we open the door for the widest and grandest generalisation ever made by the mind of man, a generalisation upon which now stands, as upon a rock, the highest science of all, the extreme height yet attained by human thought, the inconceivably majestic science—the Science of Infinitesimals. This is by far the most powerful engine now in possession of man. But let us watch the stone out in space.

It will begin falling toward the sun with a rate next to the infinitely slow; yet it moves; it falls, and to a mathematical intelligence out there, would soon become an object of fascinating interest. Its speed increases, it falls faster and faster. It will so accelerate in falling velocity that the mathematician would be unable to sense the speed. On and onward it falls, and finally dashes into the appalling surface of the seething sun with a terminal velocity of 383 miles per second. But what is this compared with the speed of light, 186,380 miles per second? Yet it is now unthinkable. And 383 miles per second is the limiting speed that the attraction of the sun's mass is able to impart to a falling body falling in even from an infinite distance. And that is the gravitational potential of the sun with its present mass expressed in terms of velocity. Let us try a mathematical experiment: instead of taking the stone to a distance that is practically infinite to us in our existing limitations, take it out to a distance of 12,000,000,000,000 miles, or half way nearly, to the nearest neighbor the sun has, and drop it. Then its terminal speed at instant of impact on the solar surface will be only one inch per second less than if it had fallen from a distance expressed by the word infinite. This teaches that gravitation is really weak at these immense distances and initial motion excessively slow. The spectroscope by intricate processes based on the wave motion of light reveals that all the suns so far subjected to spectroscopic research are in motion with velocities ranging in between five and 80 miles per second. But an astounding discovery was made; a few flying suns have been shown to be in motion with speeds of 100, 150 and even 200 miles per second. These rapid stars are a class by themselves, and seem to have no relation to the sidereal structure, the wide universe of stars of which our sun is one of the modest, or smaller stars. But all human powers of imagining are submergel when striving to think of the 200 miles per second sun. From dynamic laws it is known that it requires four times the force to double the speed of a falling body. Will the reader carefully consider the mighty triumph of mind functioning in that mystery of all time, the brain, a mass, the composition of which is nine-tenths water—here recorded—the problem solved by Simon Newcomb in his early years?

Let all the stars in existence be arranged in a spherical universe, and fix their number at 500,000,000, each containing the same quantity of matter now in our star—the sun, which is known to contain 333,726 times more matter than is in the earth.

And let the sphere of stars be in diameter so enormous that light requires 30,000 years to traverse it. Then Newcomb proved that a stone having fallen in from an infinite distance will reach the center with a speed of 21 miles per second. But the star moves with the high velocity of 200 miles per second; and it is not known whether it is at the center. This is an increase of terminal velocity by eight. Now apply the law, and it will be seen that the quantity of matter required to exert gravitation intense enough to impart the speed of 200 miles is 64 times greater than that required to set up a final speed of 25 miles per second, or sufficient matter to make 32 billion suns like our own! Then the quantity of matter emitting light intense enough to impress a sensitive photographic plate is a mere fraction of the sum total. Behold the ineffable majesty of mind—the amazing powers of man. And shall we not exclaim, eternal progression is the order of Nature, of illimitable man? Now contrast this horrific thought; there are creatures having the shape of men that will actually admit the hideous serpent alcohol into the brain, the very throne-room of the mind! What heights, what depths. And others ruin their minds for gold. But all mysteries, all potencies, all things, all speeds, rates, motions, distances, all entities, masses, attractions all, that are mentioned so far in this note, and all others whatever, as mighty a sthey are, pale and wane before the one great crowning mystery of all, so far encountered by Man, the inexplicable standing mysterious entity: Infinite Time.

This, so far in Man's career is unthinkable, unknowable, transcendent and a greater than space. Here indeed Man has met a barrier; for time would flow on and ever onward if the earth ceased to turn on its axis and count off infinitesimals called days; and stopped revolving around the sun counting infinitesimal times named years. Mere words are useless; time, duration, eternity are unknowable.

To the most vivid imagination the almost incredible, yet true speed of light seems to be infinite; it is so much greater than we are able to think of, to grasp, sense or realize, that only the word infinity appears to be applicable. Yet it is finite, for we can write 186,380 miles per second as the rate of motion. But this number of miles in space is so insignificant that it may be ignored; why, it is less than the distance of the Moon. But when we desire to grasp space with mathematics, failure is inevitable. All that can be done is to say that a straight line may be postulated to exist in space whose length is greater than any assignable number of miles. Thus a row of numerals as 89469278497882

continued to the nearest star, a distance of 25½ trillion miles, each unit representing one mile, would be still a finite quantity. And a row of figures a hundred trillion miles in length where each unit stands for a year, would represent a finite time in comparison with an infinite time or eternity. From this it appears that Man armed with the most formidable instrument in existence, the science of differentials and integrals, is powerless in the presence of infinitude, whether of space or time. And this leads up to the very doors of the most hidden chamber, adytum, crypt or corridor in the temple of Nature. The stupendous, supernal and sublime science of infinitesimals is based upon consecutive differences in the state, condition or position of anything whatever, that moves. The calculus is indeed the only real poetry of motion. All other poems on earth from the most ancient Vedanta down to Job, Homer, Virgil, Dante, Milton, Shakespear, Tennyson, even down to the Raven of Poe, these all, and more, are eclipsed by the motion poem of differentials. Here intellect burns and glows with supernal light. Behold this: space is quiescent and cannot be clutched by that mighty hand, the calculus. But time, what of it? It flows, increases, leaves to the rear discarded useless years, and moves onward creating other years. But let a billion suns come to complete rest, let other billions of planets cease revolution, let all motion in the entire sidereal universe expire and rest absolute draw on apace, then time would not be affected. The fact is, it would increase. And the highest mathematician, one knowing more than a hundred million other humans, simply stands in absolute humility in the inconceivably majestic presence of flowing, ever increasing time.

This sinking of sounding lines—mathematical measurements and computations—into infinite space deeps, from our minute electron, the Earth, is so extraordinary that after the great geometers, computers, solvers of the most complex differential equations, and lifelong diggers and dwellers amid infinitesimals, and trillions, have actually performed the colossal labours and after resting a few minutes, look over their achievements, they really do wonder how they could perform it all.

Let a most profound mathematician weigh a billion suns, lay down the pencil and try to think of the nature of the mind that has just swept through the mighty maze of figures, and he will at once find an impenetrable wall before him. He knows how to measure pressure of electric charges and potential; to measure rates of flow in circuits; is able to measure the speed of energy and weigh an electron, or sun. He is familiar with the highly complex equations expressing chemical reactions; knows the

laws of thermo-dynamics, of the power and energy of heat, plunges matter down, down in temperature to almost absolute zero, and raises it to white heat and causes it to vanish into invisible gas; he can tear apart the atoms of matter, separate them into primordial electrons, and then force these electrons through walls of metal in the tubes into outer air to be instantly lost forever from the scrutiny of human sense. He can do all these and so many more that one-tenth has not been told; yet is entirely unable to detect a clue to the nature of his own mind. I scarcely know what to write of the coming majestic advance of man. But let it be that by the year 2000 A. D., some mentalist may stumble upon a faint clue to the nature of mind. Then if this thread, more valuable than diamonds, leads to another less obscure, and to another, until finally a fact regarding what mind is, shall be discovered, then imagination fails to behold now from afar, what surpassing results will follow. The first world-wide upheaval will doubtless be the annihilation in every school on earth, from low to high, from primary to university, of present methods of instruction. For then, after the lapse of a hundred centuries down from prehistoric time, educators will at last be impressed with the cardinal fact of DIFFERENCES in the minds of their students. Thus, on that auspicious day, January 1st, A. D., 2000, a teacher facing a class of, say, ten children, will be able to see that all their minds are not exactly alike. No students will then be consigned to a course of study without first having their minds explored by a skilled mentalist. A mind then will no more be placed in the care of a teacher that knows nothing of its nature and powers ,than a locomotive would now be given to the care of one not knowing anything of its mechanism. Then, a girl, for instance, will not be almost driven to mental despair by being forced to study, to her, totally useless algebra, utterly useless during her entire subsequent life. I know, for I have seen the falling tears of tortured girls. And boys born with the inability to grasp a single fact of mathematics should not be ruined by the enforced study of these complexities. Nor should those endowed by Nature with minds all attuned to high mathematics and in which they delight and draw the most exquisite happiness known to man, be clogged and injured by studies that are repugnant. Nearly every law in ponderous books in all courts of the world will then be repealed, and new ones enacted based on the then discovered laws of mind. Then for the first time in human history EQUITY will rule every court and reverse all types of judicial procedure. Equity will appear instead of cast-iron law. I cannot summon words to describe

the most radical changes that will come when what mind is, becomes known, in the treatment of the sick, insane, weak and ciriminal. All traditions of the ages will be annihilated; and begin anew. But when knowledge of the nature and laws of mind are known, then the great and good of the world will obey these rigid laws with a fidelity all now unknown. Hideous sufferings of poverty, disease and nameless horrors of existing misnamed civilisation will vanish. And the terrors now thrown around natural death, will disappear in rational instruction given by the teachers of the people. These teachers will be highly scientific, and will teach that we must, during our sojourn in this world, rigidly obey every moral, mental and physical law, or suffer the sure and inevitable consequences. The burden of their teaching will be, we must be good, pure and true.

A Study In Physiognomy

By Robert Bennett Bean.

(Continued from December, 1913.)

THE nose is the most prominent feature of the face, and it is one of the best to determine the status of the individual from the standpoint of development. The nose may assume many shapes and it has been variously described as equiline, straight, sinuous, retroussé, etc., but the three forms it assumes in its development are somewhat independent of these more general and necessarily superficial designations. The three forms are pictured and describe delsewhere in this article, therefore they may be passed with a mere reference to their names and designations according to their evolution and development.

The nose that is of the Hypo-phylo-morph form is depressed at the root and at the bridge, where it is broad, and this makes the tip elevated so that it might be called retroussé. The nostrils flare and open outward and downward. This is the nose of the infant and the physically undeveloped.

The nose of the Meso-phylo-morph is depressed at the root, but the bridge is straight or slightly arched, the nostrils flare and open very slightly forward and downward, the nose being massive in all dimensions, long, wide and high, although less long and high than the following form.

The nose of the Hyper-phylo-morph is long, high and narrow, with nostrils that flare very little and that open almost directly downward. This nose may be either straight, sinuous, or aquiline, and at times it assumes a slightly retroussé form.

The mouth as considered externally consists of the lips to the extent that they may be said to mold it, although the teeth have some effect in shaping it. If the teeth project as in alveolar prognathism, which is more common among women than men, the mouth will also project slightly. Full lips make the mouth project also. The mouth may be large or small and to some extent the size depends upon the form of the individual. The under-developed will have smaller mouths than the over-developed. The Hypo-phylo-morph has a small mouth, the Meso-phylo-morph has a large mouth, and the Hyper-phylo-morph has a mouth of intermediate size.

The size of the lips as they appear to us is dependent somewhat upon the length of the skin from the nose to the free margin of the upper lip and from the chin to the free margin of the

lower lip. One usually judges the size of the lips by the amount of mucous membrane that is visible between the two skin edges of the lips, and by the extent of protrusion of the lips. This is not exact, because if the skin from the nose on one side and from the chin on the other, to the free margin of skin o nthe lips is small in amount, and the tissue of the lips is great in bulk the lips will appear larger than if the extent of the skin is greater and the bulk of the lips the same or less. Therefore the volume of the lips may appear greater or less than it really is. Thus in the Hypo-phylo-morph the lips appear thick because of the small amount of skin, whereas the lips of the Hyper-phylo-morph appear thin because of the greater amount of skin. The lips of the Meso-phylo-morph have a great amount of skin and the mucous membrane in view is also large. The lips of any one of the three may be relatively large or small at different times and in various individuals.

The chin, cheek bones and cheek have been mentioned, and it remains to add a word about the forehead. So much there depends upon the size of the frontal sinuses and supraorbital ridges, as well as the shape of the brain. Large frontal sinuses and supraorbital ridges in the frontal bone will give a sloping forehead, whereas the absence of these result in projection of the frontal lobes of the brain, what the French call "front bombé." The frontal sinuses and brow ridges are usually larger in men than in women, therefore men have a fiercer look with their "beetling brows"; and the heavy eyebrows and thick tissues over the forehead, as usually found in men, heighten this appearance. The large face is usually associated with large frontal sinuses and not infrequently with a relatively small brain. People with these characteristics appear ferocious and feminine qualities are associated withe the reverse.

Let us next consider the most important feature in Physiognomy, the external ear or pinna. The human ear may be described as consisting essentially of two parts, the external border, or helix, with its lower end, the lobule; and the central part, or concha, with the tragus and antitragus. The outer border of the concha is also the inner border of the helix and it is called the anthelix. The tragus is the small nodule immediately in front of the ear hole, or external auditory meatus, and the antitragus, which is opposite the tragus, is the lower end of the anthelix. Darwin's tubercle is to be seen on the upper part of the helix on the inside of its overturned margin near the top of the pinna. It represents the tip of the ear which has turned in towards the concha during the growth of the fœtus before birth. The pinna

is at first formed flat in the embryo, with a tip at the upper outer margin of the helix, and the latter is the condition of the pinna at the fourth month of intra-uterine life. At this time the ear of the fœtus resembles that of the monkey, **Macacus rhesus,** with its pointed tip extending upward and backward. Later in the development of the fœtus the ear is reduced in size by the rolling in of the tip and of the entire helix, accompanied by a projecting or protrusion of the anthelix system including the tragus and antitragus. When the adult human ear has attained its full maturity the rim of the helix has rolled inward and forward, and the tip becomes Darwin's tubercle. We may conceive that the first or earliest form of the ear after the fourth month of fœtal life is one in which the helix has rolled in, but the anthelix system, including the rim of the concha, the tragus and antitragus, has not projected far out from the head. In this condition the ear would have the form of a half bowl and would be semi-trumpet shaped. This is the condition of the Hypo-phylo-morph ear. Should there be retarded development of the ear at this stage the form would, of course, be different from that which would characterize the adult should the process of development be uninterrupted and continue to maturity. In the latter care the form of the ear would be flatter, with the anthelix system at times projecting beyond the helix, and the latter would be apparently turned back toward the head. The tragus and the antitragus would also project, and the lobule would be closer to the head than either of the other two. This is the condition of the Hyper-phylo-morph ear. Bearing these conditions in mind we may describe the forms of ears that are apparently fundamental and appear throughout the world. Two distinct forms exist, and almost all other forms of ears may be grouped about these as variants, with one form that is intermediate. The two extreme forms are called Hyper-phylo-morph and Hypo-phylo-morph, and the intermediate, Meso-phylo-morph, because they represent products of evolution as well as results of development in the individual.

The Hypo-phylo-morph ear was first called Malay by me because of its constant presence on the small, round-headed, wide-nosed, brown-skinned natives of the Philippine Islands, who form an integral part of the Malay peoples. Later I called this form of ear Primitive because it is found not only among Malays but throughout the world wherever the small, round-headed, wide-nosed people exist, and such people have been designated Primitive by many authors. Both terms are correct, but as the conception of the developmental conditions became plain,

I was induced to alter the terminology by Dr. Hrdlicka to suit the apparent condition, or place of the ear in the development of the individual and in the evolution of the race.

In the description of this form of ear, the Hypo-phylo-morph, let us take a sample from the round-headed, wide-nosed Filipino.

The ear is small and round. The helix is turned in and forms a heavy roll at the rim of the ear, extending downward into the lobule which turns almost horizontally to form a semi-shelflike lower border to the ear. The anthelix is almost parallel to the helix and is about the same size because the helix has rolled in until it has almost covered the anthelix, the two looking like a double roll surrounding the concha. The latter is wider in the horizontal diameter than in the vertical and is deep, giving a semi-bowl or trumpet shape to the ear. The tragus and the antitragus do not project beyond the border of the helix but are rather inclined to be turned in or depressed. The upper part of the helix turns over from above to form a semi-shelf similar to that formed by the lobule, and between the two is a part of the helix which does not project as much as the other parts. This often looks as if a bite had been taken out of the back of the ear, especially when viewed from behind. The Hypo-phylo-morph ear is thick and coarse, with rounded edges, and skin lines that are large and far apart, with large intermediate ridges between them.

The next form for consideration, the Hyper-phylo-morph ear, has been consistently called Iberian by me up to the present because it is found on the form of man that has been known as Iberian. The most characteristic representatives exist today on the Spanish or Iberian peninsula, and the name Hibernian has been used to designate the inhabitants of Ireland, who are to some extent of this type. The Iberian is the same as the Mediterranean Race of Sergi, and is not exactly like the primordial Hyper-phylo-morph as we have previously determined, but is slender, with delicately molded features, long, thin nose and face. The name, Iberian, was changed for the same reason that the names of the other forms were changed.

The Hyper-phylo-morph ear stands in contrast with the ear of the Hypo-phylo-morph. It is thin, long, delicately molded, and the helix is very slightly rolled in, being a mere margin rather than a heavy roll. The distance between the helix and anthelix is great above, and the helix disappears below except for a flat surface with a margin which merges into the lobule that is often absent, the helix

then passing diagonally downward directly into the cheek. The concha is long in its vertical direction and short in its horizontal, and its border, the anthelix, projects so much that viewed from behind or in front it seems to be further away from the head than the helix. The tragus and the antitragus point outward and often project beyond the helix. Looked at from behind the rim of the helix presents the shape of the italic letter *f* or the Old English letter *ſ*, and seems to have been seized between the thumb and forefinger and twisted upward and backward. The helix therefore is closest to the head at its lower extremity, the lobule, and also at the point where Darwin's tubercle should appear; and it is further away from the head at its summit, also at a point immediately behind the concha. This gives a wavy or spiral effect to the helix which is very characteristic of this form of ear. The ear is thin and the lines are fine and close together, which gives the ear a smooth appearance and a rough feeling to the touch.

The Meso-phylo-morph ear is somewhat intermediate between the other two forms, although it has distinctive characteristics that stamp it as a separate form. It is a large, heavy looking ear and soft to the touch. It is more nearly flat than either of the other two forms, although it has a lobule that slopes forward as in the Hypo-phylo-morph ear but at an angle and not so nearly horizontal, therefore the lobule forms a sloping shelf that is very broad. The helix is not more distinct than that of the Hyper-phylo-morph ear, although the rim of the helix is larger and heavier. The ear is like a large, shallow bowl, with sides that are broad and flat, and a rim that is heavy but not much rolled in. The characteristics of the individuals with this form of ear are distinct from either of the other two types, although there is evidence of intermediate features. The individuals are lanky and muscular, neither tall nor short and fat, and they have large, heavy looking faces with noses that are big in all dimensions, long, wide, and not flat, the bridge being straight and the root depressed.

I have attempted in the previous pages to outline the present distribution and previous migrations of Mankind in relation to their face form and features, after which the general and specific features of the face were considered in detail. Three distinct forms of face may be segregated throughout the world. We have seen that the Hypo-phylo-morph is at present found along the Eastern shores of Asia and on the Islands of the

Pacific Ocean, the degree of Hypo-morphism decreasing as Europe and Africa are approached, although greater in Africa than in Europe. The Meso-phylo-morph has apparently always been located in a torrid zone, at first when that zone extended far north into Europe in prehistoric times, and at present about the equator, in Africa, Australia, etc. The Hyper-phylo-morph originated around the high Asiatic plateaus that have been undergoing dessication for ages, and their dispersal was traced through northern Europe and northern Asia, southern Europe and southern Asia, and northern and eastern Africa.

We have seen that the general form of the face, as well as its intrinsic components, is molded by the development of the teeth, the enlargement of the bony sinuses around the nasal chambers, by the action of the muscles of mastication, and by the extent of the erectile tissues of the nasal cavities, as well as by the action of the facial muscles through the expression of the emotions. The appearance of the physiognomy depends upon the component elements of the face such as the eyes, nose, mouth, etc., and the size of the face below the eyes in relation to the size of the head, gives a cranio-facial index that is serviceable in the study of racial anatomy and aids in the classification of the face into the three forms previously segregated.

Finally, the external ear or pinna has been found to be the most serviceable factor in the classification of the three forms of mankind, because it is not so much subject to natural and sexual selection and has remained constant in form while other structures have undergone greater variation. Its shape is molded in cartilege, a very stable tissue. The stability and permanency of the ear form has enabled me to classify types that would otherwise have been almost, if not absolutely, impossible of classification. The characteristics of the ear form of the three types, Hypo-phylo-morph, Meso-phylo-morph and Hyper-phylo-morph, have probably remained constant throughout tens of thousands of years since the three types became fixed, and in the mixtures of the different forms due to breeding the ear retains its original characteristics to a greater extent, and is found pure in the greatest variety of peoples in all parts of the world.

THE MARSH WHERE FOUND

Hunting for Mastodon Bones in Kentucky.

By Felix J. Koch.

ACCORDING to repent report, the traction is soon to penetrate into the heart of Kentucky and to the primitive hamlet of Big Bone, where, without doubt, more mastodon hunters have gathered, in the past century, and more actual finds of the mammoth have been made, tha nat any other one place in the world.

Big Bone is a place with a history. Before the days of steam railways, when, to get anywhere at all, you had to stage it, people came in numbers to the spot to enjoy the waters of the springs. There was a bustling summer hotel there then. This is now utterly deserted and in addition to the bone hunters, as they were termed, the summer tourists, too, have decamped.

Today, to get to Big Bone entails hiring a vehicle, rising long before decent people have breakfast, and driving from Cincinnati to the Lick. Even then you're lucky if you get back before midnight, so terrible are the roads.

On the way you hear the story of the bones. According to one version, Big Bone was the greatest battlefield this country of many battlefields has ever known. According to an Indian legend, the bones of the mighty, but worsted warriors, that are buried twenty feet beneath the surface of the now quiet earth, in acres of stiff blue clay, bear silent witness to a portion of the story. The battle itself was fought over 500 years ago, with mastodons on one side, lightning and the wrath of an Indian deity on the other.

One man secured the story from an old Indian chief as follows: When Gen. William Henry Harrison had concluded the treaty with the Indians for the great Northwest Territory, he asked the Indian chiefs if they could in any way account for the numberless mighty bones of mastodons and mammoths which lay in such marvelous collections within the small valley at Big Bone Springs.

An old chief, gray with many winters, rose and answered the question thus:

"Many moons ago, ere the white man came and while the hunting was yet good, the elk, the buffalo and the deer went often to the valley of springs to drink the smelling waters. But

many and mighty mammoths also came from afar to drink, and, as the days went on, they killed or frightened off the elk, the buffalo and the deer, so that the Indians could hunt no longer. Then the Great Spirit grew angry at the mammoths and He came down from the sky and from a high hill he hurled his thunderbolts among them. The great animals were slain in countless numbers within the valley.

"Mad with terror, those that could tore through the pathways of the valley, and the deer and buffalo who remained also fled into the forests, but the Great Spirit's thunderbolts were more terrible and more destructive to the mammoths than they had been to the game. All save one was killed before they could rush from the valley.

"This great bull, the father of the herd, had only his tusks broken off by the lightning. He was old and cunning and he went screaming across the hills, sweeping trees out of his path, as an Indian would bits of grass, until he came to a great river. Here he paused only long enough to gather himself for a mighty bound; then, leaping, he cleared the wide Ohio. He tore on, through the forest, to the Great Lakes and across them, into the cold Northeast. Here he disappeared and he was seen no more, and here he lives to this day, shaggy and gray with age; his tusks gone, but still terrible to behold."

Such was the answer that General Harrison received. Whatever of truth there is or is not in the Indian legend accounting for the bones found and to be found in the valley of Big Bone Springs, at least the strange discovery by a fisherman on the coast of Labrador in 1837 lends a wierd plausibility to the old chief's story.

The fisherman in question, while tramping the beach one day, saw a huge body frozen in the ice cliffs above him. As the ice melted the body sank to the ground, and, procuring aid, he skinned it. The skin was put aboard a Russian vessel and taken to Russia. It proved to be the skin of an arctic elephant, twenty-four feet long and sixteen feet high, and the Royal Geological Society of Russia has it now. The Smithsonian Institution of Washington heard of the matter and, in course of time, had an exact reproduction made of the skin and mounted for the museum. It does not take much imagination to read, in this find of the fisherman, a sequel to the Indian legend. Indeed, when one Indian was told of it, he said the great mammoth which had escaped into the northeast had been found at last.

So much for the tradition of the valley.

If you go mammoth hunting today and look for the story

FRAGMENTS

of the bones, you will be told from another chronicle:

"Although there are signs which might point to this valley being discovered by the French long ago," this says, "the first white man to penetrate the spot was James Marshall, who came here in 1773. He found many bones of the mammoth and those also of strange, smaller animals,—a swamp some hundred acres square being literally filled with them. He told us how he made the framework of his tent with immense rib-bones, nine and ten feet long, which he picked up and drove into the earth. Marshall also found the traces of paths, leading to the springs, which were made, probably, by extinct animals, which sought them, attracted thither by the saltiness of the water.

Next, in 1805, Dr. Goforth, of Cincinnati, a well-known naturalist, made a collection of bones found at Big Bone Springs. At that time Thomas Ashe, famous English traveler, whom every historian knows as the slanderer of this country, met Dr. Goforth. The latter, desiring to send his valuable collection to the Royal Natural History Society of England, where the bones could be properly cared for and studied, placed it in charge of Ashe, who volunteered to see it safe to England. Ashe, however, on reaching London, instead of presenting the collection to the Natural History Society, sold it and pocketed the proceeds, a very fair sum.

Thomas Jefferson, who was then President, ordered more of the bones collected about this time, and those were divided equally between the Philosophical Society of Philadelphia and M. Cuvier of France. Another collection was exhumed in 1831 by Benjamin Finnel, who sold it to Mr. Graves for $2,000. The latter took the collection to England, in turn, selling it for $4,000. One student, the Rev. Dr. L. Johnson, then of Walton, Ky., a close authority on paleontology, and well versed in the scientific and historical lore of Big Bone,, told how his grandfather, John Tindoll, was accustomed to use great bones, five or six feet long and eight or ten inches in diameter for fire-irons. John Tindoll was a hunter for the salt forts at Big Bone in the early part of this century, and he speaks of it as being a common occurrence, in those days, for the hunters to place the bones in the great open fire-places and lay the logs upon them. Indeed, up to twenty years ago, many of the precious relics were actually used by the farmers as ricks, to cord their fire-wood against.

Dr. Johnson was an enthusiastic student of all that pertains to the Springs. Speaking of a collection of bones then in possession of Mr. Williams, of Big Bone, he says he saw in it a curious bone which corresponds to no other known bone in the animal

kingdom. From what he could make out of it, it seemed to be an elongated spinal section,—with another flat, thick bone, some three feet in height,—jutting up from it at right angles only. From this he thinks it may have belonged to some extinct animal, perhaps of the camel species.

Local historians relate how, in 1864, a well-known wholesale grocer and auctioneer of Cincinnati, Charles McLaughlin, bought Big Bone and the property surrounding and spent his summers there. In 1873 Mr. McLaughlin built a fine, two-story hotel, containing forty rooms, and various cottages, on the hills above the village, and put up a handsome pavilion at the springs, where people might go to drink the water and to bathe in it. Travelers from all over the country, east and west, and also many from Europe, came to Big Bone Springs, year after year, and during the summer the place was gay with people. They came by way of the Ohio River, for in those days the boats were the nearest and quickest means of reaching Big Bone. Landing at Hamilton, which is only two miles west of Big Bone, they were met by McLaughlin's busses from the hotel.

After personally superintending the hotel for three years, McLaughlin went West and others took charge, but it wasn't long before the hotel went down and the old-time guests went away, so the place was closed and has remained so ever since. Later McLaughlin returned to the Springs and for some time resided in a wing of the hotel.

In 1865, before he built the hostelry,—he told one interviewer,—Prof. Agassize came to Big Bone in pursuit of science and spent the summer with him. Agassize was much elated over what he found and he offered McLaughlin three cents a foot for the privilege of digging up the ground. Agassiz said he would dig it up, foot by foot, and replace the earth exactly as he found it; but McLaughlin did not care to have this done and he refused Agassize's offer, although, as he says: "I know better now; I didn't then!"

Agassize found one great vertebra, so large that a man could thrust his fist through the spinal canal. When one recalls that the marrow bone of the largest bullock will scarcely admit the insertion of a finger, we can imagine what a colossal brute this vertebra must have been part of. From the vertebra, Agassize estimated that the animal was some 40 feet in length, 20 feet in height and 16 feet across.

In 1865 Prof. Nathanial Shaler of Cambridge also paid a visit to Mr. McLaughlin and he took away from the Springs a wagon-load of the bones. Again, a Dr. Graham of Louisville,—

soon after this,—although over 90 years of age, came to hunt bones. The doctor, it is stated, was still an ardent scientist and he soon procured a large number of bones. These he carted down to Hamilton and loaded aboard a shanty-boat, intending to float down with them to Louisville. Before he got started, his shanty-boat, with bones and all, was stolen.

McLaughlin often found bones himself and has presented a valuable collection to the Cincinnati Museum of Natural History. He speaks of the great head of a mammoth, almost intact, which he came across while digging, one day. The bones crumble immediately the air strikes them, and unless skilled hands do the work it is almost useless to attempt to remove them. For this reason Mr. McLaughlin did not uncover more of the head, which he estimates was about the size of a large shed or out-house.

Again, while sinking a "gum" over one of the sulphur-springs, he discovered a large tusk. This also he did not attempt to uncover or remove. A gum, it should be explained, is a section of a large, hollow sycamore, or other tree, sunk in the ground over a spring. Through this the water can bubble up freely and with a greatly accelerated flow.

The soil in the valley, McLaughlin used to relate, has, first of all, about 12 feet of ordinary ground, which has to be dug through; then a five-foot layer of blue clay. Beneath this is the "slush" or swamp-ground, in which the bones and relics are preserved, while the whole rests on a bed of soap-stone. McLaughlin accounted for the finding of the bones within the small radius of the valley only as being due to the presence of the sulphur springs. When, in olden days, the monsters came there to drink the waters they often got mired in the valley,—which was then a swamp. There they died,—unable, by reason of their great bulk, to extricate themselves.

Although so much has been taken away, there are yet numberless specimens of bones in the valley, if any one cares to dig them up.

Such, then, is the story of the mastodons at Big Bone. But those who go mastodon-hunting today find their task increased manifold. Just a mile from Big Bone, on the country road, the descent is steep. There is one vast, broad, beautiful valley, opening off on the right,—through the trees,—to expose a country of corn-shocks and of corn-fields, with the lines of the green "sucker" tobacco making a patch-work of it. Set along this pike are the five little two-room frames of Big Bone. There you begin your bone-hunting. The post-mistress has some

bones, and, if she hasn't, she knows who may have. Two or three other villagers drop in and they are ready to talk "bones" always.

The little general-store has some bones at all times in stock and the proprietor brings these out. One is a vertebra, a huge affair. Then there is a tri-ridged tooth, another monster. These were found across from here, in the creek. In a show-case there is a shoulder-blade. Over yonder there is a knuckle-joint. And see,—this is a vertebra, which was broken off in some way. The bones are varnished with a brown shellac. Some of these have been found by washing off sub-soil in the creek. Yes indeed, they still find bones,—accidentally,—every once in a while. In addition there are scientists who come a'purpose to look for them. One man excavated in the creek, they state, and found two tusks, 16 feet in length. He left them there on the chance of some one coming to buy, and before long they were gone.

Big Bone is a sleepy Kentucky village and so, as yet, no one has made a business of getting bones for the selling. When, occasionally, a bone is found,—well and good,—they dispose of it. Joe Rice, for exaxmple, found a tusk, 9 feet in length, and he got a good price for it.

By and by they show you what they call the "bone-yard," the valley where a cow is grazing. Two hundred yards across, a marsh throughout, will cover it. What it may still hold none can foretell. Some day some expedition will come and dig, as scientists dig, alone, and then who can foresay what Big Bone will not show to the world?

TWO TYPES OF BONES

MITLA

By Grace Ellis Taft.

A DUSKY hillside cavern, from whose roof swung myriads of bat-claws, rustled with a whirring of leathery wings, and soft mouse-like bodies hurried away in thousands into the purple Mexican night. Outside the cave-mouth hesitated a hunter. The feathers of his cap hung dew-draggled upon his brown shoulders. His thoughtful eyes followed as they could the flight of shadows into darkness. Instinctively he shuddered, thinking them produced by spirits of the dead; for the earth, to his mystical belief, is "the great mouth that eats all mouths," and from a cavern stepped the four ancestors of humankind according to the Mexicans.

Yet a kind of solemn pleasure sparkled in the hunter's eyes, for he was the sole discoverer of the cave. He folded his cotton cape upon the stones before the opening and, drawing from out his scarlet belt a clay pipe graven with hieroglyphics, he lighted it and smoked until the dawn recalled those whirring wings to their abode of sleep.

With the morning, up he rose again, this tribesman of the Zapotecs, and strode through miles of lovely country in the Mexican Valley of Oaxaca.

How long ago the sun rose upon his going, no one knows; but the news he carried to his native king and priests delighted them, and won him no doubt a momentary fame. On the higher land of the valley, near the river of Mitla, a few years were spent in the building of such pyramids and temples as no other Mexican nation had yet achieved.

Mitla,—the city of priests and tombs,—was noted for its architectural beauty. Cut stone, under the direction of an inspired priesthood and reverent king, and by the hands of a devoted people, rose around courtyards into palaces grander by the dignity of death. Rooms above ground for the reception of the living were duplicated in the basement with other chambers for the reception of the dead.

The chief priest, here enthroned in his palace on cushions of tiger skin stuffed with delicate feathers, led a life of ease. Below the floors he trod on, slept ensepultured the hierarch he had succeeded. His brother priests under his paternal orders came from

their mat-strewn dwelling to prepare each spring for the arrival of the king.

Cocijo-eza, the king, rocked in his palanquin along the narrow roadway by the river, with a hundred stumbling black courtiers substituting one shoulder for another under the hammock poles that bore his royal state. The king heard a great sigh rise from the multitude around him as a clear hilltop rose into view between the tropical trees, and one square building after another displayed in the pure sunlight its brilliant white traceries of scrolls and arabesque designs cut upon the flaming scarlet of its painted walls. Boldly fording a tiny brooklet that slumbered at the foot of a small pyramid surrounded by religious edifices, the crowd of men pushed forward to a nobler array of buildings at the door of which waited a crowd of white-robed holy men whose chief, adorned with many golden insignia of office, breathed a welcoming benediction.

Above the doorway, crowded a host of goblin paintings that represented, as nearly as the Zapotec priest could make them, the "Lord of the Dawn"—Coqui-cilla—and "The Maker of Beasts"—Pitoo-Cozaana—and many more gods. Everywhere the color of blood declared the purpose of these buildings, and Uija-tao, the "great seer," and his attendant "sacrificers," the priests, were ready with handfuls of bright feathers and feathery grass to receive the ruby drops that soon would be drawn at tongue-tip or ear-lobe or nostril, by knives of flint and bone. More wonderful frescoes above the inner doorways of the courtyard showed the terrible lords of death and hell, and Xbalanque who overcame them, and that fair hero-god who here repented of his drunkenness and whose sacrificed heart rose to become the planet Venus.

Dreming in that chamber of his above the dead, Uija-tao had sent his yearly message to kin Cocijo-eza. Days now passed in solemn rites and festivals of maize bread and chocolate and pulque and flesh of deer.

On the most significant day, the king passed down a stairway into a subterrean court shaped like a cross. A long white garment veiled the chief priest's swarthiness, and over it hung a long gaily-figured collar of woven feathers. King and attendants reverently watched his ceremonious approach to the altar where a strange trance fell upon him, and with incoherent mumblings his lips declared the will of the gods whose idols he bowed before.

Recovering from his state of self-hypnosis, the priest Uija-tao would order a human victim to be fastened prone upon the huge spherical stone before the altar. The hideously dripping stone knives of his assistants dug out that quivering captive's heart and Uija-tao held it to the lips of each idol in turn.

Or again, the priestly audience with him would lead to the dark door of another subterranean chamber, some more fanatic dreamer than them all. Their farewells sounded behind him. As he closed the door, they knew that with slow steps he made his way through the thick pestiferous darkness of the crypt beneath Mitla's most gorgeous temple. Through mysterious passages he wandered on into that ancient cavern, once haunted by bats, and now tenanted only by the perishing remains of Zapotec soldiers that here found sanctified rest after some great battle of the bloody past. He, living, to the dead went willingly, and returned never again.

The Origin of Our Alphabet

By N. Kolkin

AS is well known, all western printed alphabets, with only some insignificant exceptions, are thought to have sprung from a Phenician alphabet. In regard to this there is nothing to say; it looks that way. When it is found, however, that some of the letters vary from their supposed prototype, it is thought that those who adopted an alphabet, took the liberty to make a few changes. There are reasons to believe, that the people were not so free as that with their new alphabets. There had to be high authority for the making of changes. This they got in full measure from different directions. While the principal alphabets were from the Phonician, there were evidently several other obscure alphabets. They seem all to have been picked out of a current syllabary used throughout Asia-Minor or Hittite empire, especially among the Aramaeans. The syllabary had, of course, five different signs for b, for instnce, as a ba, be, bi, bo, bu. Several practical men must have picked alphabets out of the current syllabaries and set them afloat. These current syllabaries seem to be, what the Japanese call the "kanas," each, consisting of 72 signs.

Nearly all variations in the letters can be traced to the Katakana, the Hirakana, and some other current syllabaries. How the Japanese got this "kana" whether from the Hindus, as some think, or had it themselves, shall not be discussed here. The writer thinks it is quite natural, that the Japanese had preserved it themselves from prehistoric times, as they once evidently occupied the Camisene district between Asia Minor and Armenia. It is said that a priest by name Kukai invented the kana, but that is popular theory. There is also another kana of 50 characters, a kind of script, said to be invented by the same priest, but that, too, is wrong; for how did he get the characters so much like western letters? Where this script is not like Greek or Latin forms, it sometimes happens to be like German script, as capital h for instance. In the script kana, the different vocalize dr's, to use an example, are more alike than in the carfully drawn Kata-kana. R looks very much like capital Latin R with the vertical stem omitted.

There was a syllabary used in Asia Minor or Armenia that developed into script and was simplified. All forms of writingamong Europeans copied some form in this syllabary. Scarcely anything is abitrarily invented. It shrunk into an alphabet. We suppose the Armaeane or Syrians were those that mainly developed the different syllabaries, and the trading Phenicians were mainly instrumental in spreading excerpts of them far away. People in the district, where the syllabary was used, got many variations in their alphabets.

We shall not go deeply into the subject here. Those who wish to study the kanas will find them in a Japanese Dictionary by Capt. F. Brinkley and others (Tokio). The Kata-kana begins with i followed by ro, ha, ba, pa, &c. H, b and p use similar forms, the two last are distinguished by diacritical marks. Only, where u is the vowel, f takes the place of h. We suppose the Japanese modified the original syllabary to some extent. As they have no l, this sound is either left out, or some of the r's stand for original l characters. Re is represented by capital Latin L. The yo and ya forms may also have been l's.

Ro looks like a square Greek capital rho, only that the vertical stem is not carried down so far, but also projects upward. **Ha** and **Ba** are not like European letters, but **Hi** and **Bi** must be the origin of small Latin h and b. **Ni,** two horizontal lines, the upper shorter than the lower, will furnish the basis for small Greek n when the right hand side of the page is turned upward. This is often the way letters are copied in alphabets; the left side is seldom or never up. A letter is often turned upside down. **To** is exactly the Brahmi t, a vertical line with an oblique line sticking into its side above the middle, not unlike our script t. **Ri** is like the small Greek r turned back forth. **Nu** is like the Runic n. **Mi,** three small horizontal lines, will furnish the basis for our m, when laid on its side. **Ru** is our awkward crooked-back small script r (r), not the italic. **Ka** might well be the basis of capital K with rapid writing. **Yo** might be an omega, when on its side. **Ta** might look something like a capital script t, but **Te** has eractly that form. **Na** is a Runic n, lying less on its side. **A** is the capital a, lying on its side and looking like the early Greek letter. **Wa,** the broad u-a, is an ox's head. **Wa** is "wah" or "wakh," a cow (vacca), though it was probably "auh" or "auhus" in early Gothic. If the cross line above is taken away, it looks

like our v, but if it is inverted as it is, it is exactly our capital a. This is the real aleph (ox). **U** also looks like v, when the crossing is taken out of it. **Su** and **Zu** are like our italic capital z. **Fu** is like the Kharoshti f, a capital gamma back forth, and **Bu** is such gamma, with diacritical points or Hebrew beth without the floor.

In the script Kana, the hiragana or smooth kana, about half the forms are like European letters. The N forms look like written n, as a school boy might write it. The most divergent is **No,** which looks like the small Greek s with the tail taken clear down after the letter; but even this, with a careless touch of the paper in starting, will look like an n. The k's are here all like the angular Greek or Latin C or k.

It is thought that Cyrillus invented a Slavic alphabet, combining the Greek characters with some new forms. We do not know what he did. There is another Slavic alphabet that he did not invent, the Glagolitic. This alphabet also has some characters in addition to the Greek. If the Japanese had lived alongside of the Slavs, we would simply say those new forms were partly taken out of the Kata-kana. We shall mention one form. B was prounounced as v in Greek, so the Slavs needed a b. This is exactly out of the Kata-kana. **Bi,** there, is a vertical line with two horizontal ones on its right, at the base and at the middle, like capital E with the upper line taken out. This Bi has two marks (quotation marks) at the end of the upper of the two lines in the kana. Even these are retained in the Glagolitic, but they are put on the top of the line. It might be said that **Bi** and **Hi** are the original forms of our small b and h, developed by routine in writing. How b and h could have the same form, when we know, that some people used h, where others used w or b in early times.

Archaeology at Alexandria During 1912

By Joseph Offord

THE report to the Alexandria Municipality of the excavations carried out, and acquisitions made by the city's Museum during 1912 has been edited by Signor Professor Breccia, the Director, and published with twenty-three plates, containing many photographs and colored illustrations. It is of special interest because of the remarkable discoveries of Christian antiquities near Abou Girgeh, and of a Greek inscription concerning a hitherto unknown Jewish colony.

Although magnificent remains of Christian buildings and relics have been unearthed at the shrine of St. Menas, some distance south-west of Alexandria, up to the present but little of the Byzantine period had been found elsewhere in the lower Delta.

The discoveries of recent years have brought to light in other parts of Egypt numerous Christian frescoes and mosaics but very few of these are of the period dating from the fourth to the tenth centuries.

Abou Girgeh is about thirty kilometres south-west of the railway station of hafr Dawar near Alexandria near a village called Abu-el-Eda, built upon a mound of ruins.

A Museum inspector had noticed in the Mosque the base of an ancient column of fine workmanship which must have belonged to some Christian edifice. Also in front of the Mosque there was a stone carved in the form of a cross surmounted by a crown, this was told to Professor Breccia, who at once investigated the matter in the hope that this might prove the clue to the remains of an important church. The officials of Abu-el-Eda stated that the relics came from the Kom (the mound) of Abu Girgeh, a three hours' walk away in the wilderness of Mariout. In vain efforts were made to obtain the column base, the Mosque authorities refusing to part with it.

The Museum not having funds for proper excavations arranged with Prince Seif Eddive, who needed a quantity of building stone, that he might excavate the mound for that purpose,

provided the enterprise was watched by a Museum inspector. Work commenced upon one of a semi circle of hillocks at Abou Girgeh, and soon traces came to light of an important Christian edifice, including a subterranean chapel. The walls had been covered with eleborate painting but nearly all of them now destroyed. Blocks of stone were also found with hieroglyphs, apparently of the age of Rameses II.

The report contains some interesting reproductions of the few frescoes described in good condition, one of which part only is preserved, evidently depicts the Annunciation and is a rare mural representation of this scene. The Angel is the chief figure left and his attitude is remarkable as one of the oldest examples of the Angelic Salutation.

Another frescoe presents a very curious head of Christ, with large black eyes, wide open, a long straight nose, and fine little moustaches, with the points turned down, somewhat in the Chinese fashion. The eyes, eye-brows, and moustaches are painted in reddish-brown, while the hair and short pointed beard are in deep black. The type is by no means Semitic, or Hebrew; but much resembles that of Mummy portraits of the Roman period found in Egypt, and depicts a face that may be seen today among the Egyptians Fellahin or Bedouin.

Another frescoe apparently shows a Saint in Paradise in the midst of flowers and aquatic plants, a small nude figure seems to be working among the verdure, and if this is the intention of the artist it shows how the old Egyptian ideas of life in the Elysian Fields with laborers to work for you were imported into Christian views of the future state. These paintings from the artistic point of view prove in great measure the truth of the theory that as to the Hellenistic character of early Christian art of Egypt and show a striking likeness to the paintings in the Hellenistic tombs near Alexandria, such as those of Sidi-Gaber, and Wardan.

The date of these Abou Girgeh ruins must be assigned to about the sixth century. The names indicate that the sanctuary was dedicated to St. George, but it is yet impossible to decide whether this first site explored is that of the church dedicated to St. George as the other mounds have yet to be excavated. The inscription concerning a Jewish Synagogue was found nearer to Alexandria. It reads as follows: "In honor of King Ptolemy and of the Queen Cleopatra, his sister, and of the

Queen Cleopatra, his wife, the Jews Xenephyris (have dedicated) the portal of the synagogue. The presidents being Theodore and Achillion."

The king mentioned herein must be Ptolemy VII, Euergetes II, and so should date sometime between 143 and 116 B. C. His two consorts are mentioned, first his sister Cleopatra II, and his niece Cleopatra III. His marriage with the latter took place in 143 B. C. As the text does not allude to his son by her it probably was engraved nearer to 143 B. C. than 116 B. C. This is the first record of Xenephyris, a town whose site was quite unknown, but it was mentioned in the geographical lexicon of Stephen Byzantium, who speaks of it as upon the Lybian side of Egypt, that would mean to the west of the Rosetta branch of the Nile. This inscription adds one more to the sites in lower Egypt possessing a Jewish colony, and may be one of the five places mentioned by Isaiah as having Hebrew worshipers of Jehovah, altho they were in Egypt, from the papyri, and recently found inscriptions, synagogues at Schedia, Athribis, Arsinoe and Oxychynchus, in the Fayoum, also at Alexandria are recorded. Then there is a text referring to one at a site which is unknown as the inscription is mutilated and does not now give the name. It, however, tells us it was an edifice to which Euergetes II granted the right of "Asylum." This is the same monarch as he of the new found Xenephyris text, so it is possible that both refer to the same Jewish building.

The Museum has also obtained many antiquities from two ancient cemeteries of the Greek era opened up in the eastern suburbs of Alexandria, by the work for building the railway. These are chiefly statuettes of terra cotta among which is one of a negro and another a bust of a criminal or degenerate which deserve especial mention. Several of the tombs and figure paintings upon their portals are much faded. One of these, a figure of Hermes, is of good workmanship.

One result of the Museum's activity is that the building is now too small for the contents it harbors, and as more relics will come in annually the necessity for enlarging the edifice has become urgent. American visitors should never omit to stay at Alexandria for the purpose of exploring the contents of its Museum and talking with Dr. Breccia about the many sites nearby still awaiting exploration.

INFINITY

U. S. Grant Deaton.

Infinite, not being
Anything at all,
Neither is it seeing
Silent shadows fall.

Nothing, culmination
Of a point beyond
Substance, 'magination
Dimly sees abscond.

Not the merry mingler
Or the word of wit,
That might hold a jingler,
Juggler till he quit!

Not imagination
In its boundless flight!
Not the consternation
From a wrong or right!

Not an alwise being
Whom some say is God,
Or a being seeing
Bodies laid 'neath sod.

Not a huge gigantic
Something we might see,
For a thought pedantic
Blocks infinity!

Not a little something
We might do or say,
Or a part of one thing
If we go or stay.

Man is born immortal—
Finite innocence!
While on earth he's mortal
For experience!

Man should learn by living
Earth's probation here,
And delight in giving
Good work with good cheer.

Let the lamp burn brightly
And reveal the truth,
For all men should rightly
Seek immortal youth.

Finite, not abstraction—
Represents all things!
Finite has attraction,
From it being springs!

Infinite, not finite—
Hole, a point not there!
No, not night or twilight,
Or thing anywhere!

Going on forever
Is the stream of time!
Going on and never
Halting anytime!

Infinite, not going,
Coming, or a rest!
Infinite, not knowing—
Nothing in the quest!

Can man's understanding
Pierce where nothing is,
And an overstanding
Nothing more than his?

How can contemplation
Reach the infiinite,
And imagination
Grasp no thing finite?

Finite is polemic
With all thinking men—

Infinite, endemic?
No past, now, or when!

Let the wisest sages
Lute, not over much,
Harps whose finite ages
Infinite can't touch.

Ignorance is boldest
And stalks unabash'd,
While the sage, tho oldest,
Feels his knowledge lash'd.

Ignorance is finite
Tho it should not be,
And the loss of right light
Knows infinity.

Let all finite workers
Toil for finite good,
And all finite shirkers
Labor as they should.

May each finite being
Realize Life's Dream,
And enjoy while seeing
Heaven's finite stream.

Let the choicest blessing
On the finite drift,
And exclude all guessing
From an Angel's gift.

Let each finite reaper
Glean for Heaven's joy,
And each finite keeper
Righteousness employ.

Grand and great is Heaven
With its finite things;
Strong must be the leaven
That right living brings!

When earth life is ended
With a finite close,
May its joys be blended
As it upward goes.

Grant each person trying
To live Golden Rule—
Happiness when dying
For an Angel jew'l.

Oriental Review

Conducted by Frederick Starr.

BOOK NOTICES.

Ancestor-Worship and Japanese Law. Nobushige Hozumi. Tokyo, Osaka and Kyoto: 1913. Third and revised edition. 16°, pp. xxxi, 198. The Maruzen Kabushi-ki Kaisha.

Dr. Hozumi delivered an address upon the above subject at the International Congress of Orientalists at Rome in 1899. The address was printed at that time. In 1912, it appeared in a second edition, revised and enlarged. A new edition, of 1913, is before us. It is neatly and substantially bound and contains several illustrations of exceptional interest. After a brief introduction, the author divides his matter into three parts—Ancestor-Worship in General, Ancestor-Worship in Japan, and Ancestor-Worship and Law. Naturally, the real interest of the book lies in the last two parts. There are three kinds of ancestor-worship in Japan—Worship of Imperial Ancestors, Worship of Clan Ancestors, and Worship of Family Ancestors. Three chapters are devoted to the description of these three forms. This, however interesting it may be, and it is deeply interesting, is presented merely that the author's main thesis may be developed—namely, that ancestor-worship underlies and his influenced all of Japanese law. The government is based upon ancestor-worship. "That the foundation of our government was the worship of ancestors is shown by the word for government, **matsuri-goto**, which literally means affairs of worship." There is a department of divine worship in the government. Even today "all great affairs of state, such as the promulgation of the Constitution, the declaration of war, the conclusion of peace, and he revision of treaties with foreign powers, are reported to the Great Shrine of the First Imperial Ancestor at Isé, and sometimes also to the graves of other Imperial Ancestors." Ancestor-worship is the fundamental principle of the Constitution, and that document is permeated by its spirit. The position of the Imperial House, its relation to the people and the regulation of all its acts depend upon Ancestor-worship. The author then proceeds in a series of chapters to show how Ancestor-worship

affects all the ideas and legal status of the people and of the House, and how marriage, divorce, adoption and succession all depend absolutely upon it. In fact, if ancestor-worship were seriously shaken in Japan, it would necessitate readjustment on the widest scale—it would precipitate a revolution, which would demand an entire reconstruction of society. That our author considers such a shaking unlikely is indicated by his words: "It was the primeval religion of the country from the earliest times of our history and is universally practiced by our people at the present moment. As has already been pointed out at the commencement of this book, neither the introduction of Chinese civilization, the spread of Buddhism, nor the influence of European civilization has done anything to shake the firm rooted custom of the people."

Chinese Early Barter and Uninscribed Money. Manuals of Far Eastern Numismatics, No. 2. H. A. Ramsden. Yokohama: 1912. Jun Kobayagawa Co. 8°, pp. 34.

In ancient China it was the custom, even from prehistoric times, to use metallic tools or implements of small size in barter. The practice extended into historic times, as can be shown by reference to printed sources. This use of objects in barter appears to be the first step in the development of Chinese coinage. The articles so used were, no doubt, at first actual and serviceable tools or implements; later, reduction in size and weight came about,—still later, change in form; finally, with inscription they became actual coins. Chinese numismatic writers frequently refer to such objects of primitive barter or media of exchange. Outside writers appear to have given little attention to the matter. In the brochure before us, second in a series of Manuals of Far Eastern Numismatics, Mr. Ramsden goes into the subject with thoroughness. The list of objects, which he describes and illustrates with care, includes domestic implements, weapons, and miscellaneous utensils. Among the objects are spades, knives, bells, graters, weights, arrowheads, halberds, swords and rings. Some of these are of special interest as they have actually given rise to genuine money. Thus spade, knife and ring have given the three well known types of Chinese coins—spade coins, knife coins, and round coins. There is no more interesting point in numismatic archæology than the fact that one can trace in the meaningless lines found on actual historic coins the evidence of their source in tokens, which derive their form and function from true implements employed in

barter. Mr. Ramsden's interesting manual is illustrated by 92 illustrations of specimens in his collection.

Chinese Open-work Amulet-Coins. H. A. Ramsden: 1911. Jun Kobayagawa Co. 8°, pp. 60.

We have already called the attention of our readers to Ramsden's **Corean Coin-Charms and Amulets.** In this later work by the same author, we have a similar treatment of **Chinese Open-work Amulet-Coins.** Amulet-coins have long been used throughout the Far East. They have been neglected by the numismatist. Besides these two works by Ramsden, perhaps the only book dealing exclusively with the subject is Kaniz' **Chinesischen Tempelmuenzen.** In that work only 101 pieces in all are described, of which but six belong to the class which Ramsden designates by the term "open-work." Chaudoir, in his work on Eastern numismatics, reproduces 27 varieties. Ramsden here calls attention to 203 different ones in his own collection, and describes and illustrates every type. These open-work amulet-coins are found distributed well over China. They are circular, usually pierced with a round hole for suspension, being worn or carried on the person; they are of bronze, cast, and bear various well known symbols of good luck or fortune; the space around these designs is more or less cut out, which gives the name "open-work" to the pieces. Among the more common designs are the dragon, tiger, kilin, phœnix, fish, deer, fruit, flowers, and foliage. While the designs are often quaint, the workmanship is good and the effect pleasing. Comparing them with the similar open-work coin-amulets of Korea, our author says: "Their (Korean) delicate workmanship and detailed design, although giving an impression of refinement, make them almost appear effeminate when compared with the vigorous Chinese productions, so full of virile strength." The excellent illustrations, by which the monograph is fully illustrated, are of natural size and are reproduced from actual rubbings.

NOTES.

The Korea Branch of the Royal Asiatic Society continues to hold regular meetings and has resumed the publication of its **Transactions.** During the last two years it has printed Parts I and II of Volume IV. The list of papers in these is:

The Old People and the New Government. Midori Komatsu.

The Korean Alphabet. J. C. Gale.

Japanese-Korean Relations, after the Japanese Invasion of Korea in the XVIth Century. I. Yomagata.

The Village Gilds of Old Korea. P. L. Gillett.

Coinage of Old Korea. M. Ichikara.

The two parts together (unfortunately page-numbered independently) make a total of 144 octavo pages. We are glad to see the hearty co-operation in the work of the Branch between foreigners and Japanese. All the papers are of good quality and deserve a careful reading. It is no discrimination to particularly mention the paper by Dr. Gale upon The Korean Alphabet. It is of extraordinary interest, scholarly, clearly stated and admirably illustrated. The author starts with questions, When was the alphabet formed? What prompted its creation? Who made it? What records have we concerning it? What are the laws that govren the letters as to their number, their order, their sound, their shape, their names? The author dissents from the ordinary reference of the Korean alphabet to a Sanskrit source. At the end of his discussions he enunciates some conclusions of such interest that we quote them in our Selections. We wish that the Branch saw fit to print its list of members, its by-laws and its regulations in its Transactions.

New Numismatic Journal. The indefatigable numismatist, Mr. H. A. Ramsden, of Yokohama, has undertaken the publication of a magazine under the name of **The Numismatic and Philatelic Journal of Japan.** It is the official organ of the Yokohama Numismatic Society of which Mr. Ramsden is President and active worker. The magazine is a handsomely printed monthly of 40 pages to the number and is half in English, half in Japanese. Six numbers make a volume and the subscription price per year (twelve numbers) is four yen, or two dollars. Most of the English articles re-appear in Japanese; such Japanese articles as are not also printed in English have English legends under the illustrations. A wide range of articles appear dealing with coins, medals, stamps, postmarks and similar matters, all of the Far East. In the numbers for 1913, besides a chronicle of new issues of coins and stamps are such articles as **Paper Money of Formosa, Errors in the formation of the Ideographs "An Tang" found on the early currency of this ancient Chinese city, Japanese Postmarks and Cancellations, Corean Commemorative Medals and Decorations, Main Types of Chi-**

nese Republican Surcharged Stamps, Morita Hotan—Japanese Numismatist, The Railway Stamps of Japan, Lin Hai and the Three-legged Toad, Seals for Impressing on Chinese Private Bank-Notes and Their Significance, Japanese Matsuri-sen or Festival Charm-coins, The Hat Stamps of Formosa, Fookinese Modern Cast Copper Coins, Two Recent Japanese Commemorative Postmarks, The Cowry Currency of Ancient China, etc., etc. This is all valuable material, not to be found elsewhere. Each issue contains two or more handsome plates besides text-cuts. We wish the new venture a hearty support.

SELECTED.

The Korcan Alphabet, or Enmun.—In conclusion it would seem fair to say that:

I. Since the number of letters, 28, agrees, the consonants with the Chinese alphabet of Initials as found in Kang-huei, and the vowels with the law of the **Yang** and **Yin** about the circle;

II. And since the order of the consonants agrees exactly with the order in Chinese and not with the Sanscrit;

III. And since the sounds of the letters agree with the seven notes of the Chinese gamut, even to the five full notes and the two semitones;

IV. And since they conform to the peculiar law of mixed and clear so exactly;

V. And since the shape of the consonants con be explained by the low of the circle and the one and two strokes, and the vowels by the first three Radicals in the character;

VI. And since the peculiar names of the eight letters that have names agree with the Chinese Pan-jol;

VII. And since the order of strokes and the manner of writing agree likewise with the Chinese, we conclude that the alphabet came direct from China and that the laws and principles explained in the preface to the Kang-heui Dictionary are the key to its formation.—J. S. Gale. Trans. Korea Branch R. A. S. vol IV. Part 1.

Nature of the Japanese Government.—The foregoing statements lead us to a very peculiar conclusion as to the nature of the government, which may at first sight seem paradoxical, and yet is true. The Emperor holds the sovereign power, not as his

own inherent right, but as an inheritance from his Divine Ancestor. The government is therefore **theocratical**. The Emperro rules over the country as the supreme head of the vast family of the Japanese nation. The government is, therefore, **patriarchal.** The Emperor exercises the sovereign power according to the Constitution, which is based on the most advanced principles of modern constitutionalism. The government is, therefore, **constitutional.** In other words the fundamental principle of the Japanese government is **theocratico-patriarchal-constitutionalism.** This tripartite character of the government presents the curious meeting of the Past and Present, to which I referred at the outset of this work.—Hozumi. Ancestor-Worship and Japanese Law.

Editorials

The "Arabian Nights" contains no greater story of priceless treasure than that which could be written on the five great rooms of the Victoria and Albert Museum, in which the Salting collection is now stored.

The nation has acquired no greater treasure store since the bequest of the Wallace collection. Mr. George Salting, the donor, was the son of an Australian farmer. He came to this country with a fortune of £30,000. His life's work was the collection of art treasures, and for these he traveled into obscure corners of the world. When he died in December 1909 he had accumulated a tresure store which £2,000,000 would not purchase.

It was said that when Mr. Salting came to bid at Christie's the authorities of the British Museum left, for it was known that one day Mr. Salting's purchase would be left to the nation.

When his two rooms in the Thatched House Club in St. James street became full of treasures he sent the surplus on loan to South Kensington.

Now the museum has the entire collection, and the new exhibits include wonderful Holbein miniatures, Japanese ivories and sword guards, and rare specimens in lacquer and bronze.

Some of the cases contain exhibits valued at £50,000, while a tiny specimen of Oriental porcelain represents a money value of £2,000.

The gem of the whole collection, however, is Holbein's minature of Queen Anne of Cleves. Holbein was sent by Henry VIII. to Duren, near Aix-la-Chapelle, for the purpose of bringing back with him a life-like portrait of the Queen.

It will be remembered that the King and Queen paid a private visit to the collection last Friday. The public will be admitted tomorrow.

The pamphlet of Alexander McAllan, "America's Place in Mythology and Ancient Chinese Account of the Grand Canyon" has opened up a new field of research in regard to the origin of the so-called cliff-dwellers of the southwest.

It has been the tendency of professional archaeologists and anthropologists to reduce all data to a dead level, uninteresting science. They formulate a theory or hypothesis and then bend every energy towards making the existing relics conform and approve their theory. They either ignore or conceal such facts as will not militate towards the furtherance of their cause.

In pre-historic times or rather pre-columbian, it seems an indisputable fact that the North American continent was inhabited by a Caucasian race. Dr. E. S. Curry was the first to call attention to the traditions and relicts of a white race on the western coast of Central America and Mexico.

In an article of the May-June, 1911, American Antiquarian, Dr. Curry's researches were discussed under the heading "Is Dr. Curry right?" He contends that the white people of Mexico were conquered and practically annihilated or assimilated by a type of people belonging to the Mongolian race, we perhaps knowing them under the title of Maya. Relicts of these blonde and red-haired race are still to be found among the indians of the western coast of Central America.

Mr. McAllan holds that this remnant of the white race left Mexico about 1180 A. D. migrating northward under the leadership of a princess and settling first at Pimo, Arizona, the number of people being estimated at 20,000 or 30,000 men, women and children, under absolute military rule, led by capable officers. They were divided into seven regiments or corps, each and every man of which was an architect, thus they were enabled to rapidly build the great cliff dwellings, such as the Casa Granda, the Pine Tree House, Montezuma's Castle, etc., in a very short time.

While this may all be proven archaeologically, yet the thing that is most interesting to the editor is the query, "whence originally came these white people?" They were in Central America and Mexico and undoubtedly they were the builders of the marvelous buildings in the cliffs of the southwest, yet the question remains unanswered and so far as the editor can see, unanswerable, as to whence came these people. The indian traditions clearly and emphatically announce that they derived their culture from this migratory band. Chinese and oriental records plainly describe their wanderings and their locations, yet not one word in re origin. Did they come from Tula, Atlantis or from whence? Yet that pushes the query back to

the fundamental, whence came the original Caucasian or Aryan race?

There has gotten abroad an erroneous idea concerning our military service, especially in the marine corps.

While it is not a part of archaeology to set forth the difficulties encountered by certain departments of our Government, yet we feel that our duty as a citizen and patriot to do what we can to correct these erroneous notions that are prevalent.

It seems that the popular opinion prevails that service in the marine corps is one of continuous drudgery and hardship, poor pay and all that goes to make that branch of the military service a life of slavery.

We have before us a communication direct from the Secretary of Navy, setting forth the advantages of service in the marine corps. In examining the statistics we were struck with the financial side of the proposition. By proper manipulation of pay, with no promotion and as private in the corps, upon being retired at the close of his seventh enlistment, he receives pension of three-fourths of his pay while in active service, plus $15.00 per month, making the pension of a mere private upon retirement equivalent to $35.00 a month. By saving his pay during the period of his enlistment and depositing it with the the United States Government at 4 per cent., upon his retirement he will have a capital of over $10,000.00. The income from this and his pension will give him an annuity of $1,000.00 a year. What percentage of men in civil life at the close of thirty years of work will have saved $20,000.00, which is the equivalent capital of the retired marine? During this thirty years of service (or more properly twenty-eight) the marine has not had the worries and misfortunes that usually accompany a civil life. He has, in addition, the confidence and respect of all his fellow citizens and countrymen.

If the Editor was a young man without trade or profession, he would say, without restraint that he would immediately enlist in the marine corps, where the work is light, pleasant, healthful and the hours of active duty short.

Book Reviews

COINS OF THE JEWS—HISTORY OF JEWISH COINAGE IN CLASSICAL HEBREW.

By Samuel Raffaeli.

Jerusalem & Leipzig, 1913.

A welcome addition to the literature of Jewish numismatics is made by Mr. Samuel Raffaeli in his treatise on the "Coins of the Jews." The book is written in Hebrew, and will therefore be available only for a limited circle of readers.

To the Jews themselves however, and to Christian students who are sufficiently familiar with their ancient language, it will be found to be of considerable interest and value.

Competent and authoritative guides through the intricacies of the succession of the coined money of the Jews are not wanting in English and similar works exist in French and German.

As far as our knowledge goes, this is the first attempt to render a historical account of them in the Hebrew language. The author moreover shows himself fully acquainted with the work of his predecessors in the field.

A special feature of M. Raffaelli's book is the very complete series of plates, thirty-five in number—of which the first four give illustrations of weights and seals, on the remaining plates are figured 213 coins, from early Greek and Macedonian times down to late Roman.

The greater part of the text is occupied with a full description of the coins represented, with a translation of the inscriptions or transliterations of the ancient Hebrew into the square character, a table of ancient alphabets is prefixed, and a few pages of corrections and additions.

An introductory chapter also furnishes a brief historical account of the progress and position of numismatic study so far as the Jewish coinage is concerned, and supplies the necessary references for further study.

For those who possess the requisite facility in the Hebrew tongue the work of M. Raffaeli will prove itself a reliable and useful compendium.

AMERICA'S PLACE IN MYTHOLOGY

By Alexander McAllan

103 North 7th Street, Brooklyn, N. Y.—25 cts.

This little book is one of the most peculiar that has come from any press to date. We usually consider that the American continents were discovered by Columbus, but Mr. McAllan turns to Asiatic literature to establish the Americas' place in the ancient world and by the term "ancient" we mean a period far ante-dating mediaeval Europe.

It is not that Asiatic priests visited the Americas and returned to China and India with their reports and with a description of our continent, but, on the contrary, that an intelligent tribe or tribes of about 20,000 or 30,000 people, mound-builders, succeeded in escaping from the valleys of the Ohio and the Mississippi and even from America itself, across into Asia.

The original host was lead by a princess, born in Mexico, making their way northward into what is known as Arizona. There a son was born who became the grand-sire of Kublai Khan, the ancestor of Tamerlane, the grand leader of the Moguls.

Throughout this little book notice is taken of the Asiatic literature that bears upon the American continent. Following this pamphlet is its sequel entitled "Ancient Chinese Account of the Grand Canyon, or Course of the Colorado," the greater portion of which is devoted to the account of the cave dwellings in the Grand Canyon and the development of the theory of the flight of the mother of Mu or Mo or Mok, to the plateau of the region or basin of the Colorado, called Pimo. This baby prince is often called Muti according to the Chinese records and Muti by the Pimos. According to the Chinese record Ti or Te is equivalent to the Imperial Heir Apparent, Ju or Zu is the Asiatic for boy (Yao) or Mu means delicate one, thus making the Latinized word Montezuma, we have the Chinese Mu-ti-ju-(Yao), or The Imperial Heir Apparent.

This Heir Apparent, upon reaching maturity was hard pressed by savage tribes around him and by the drought of his desert empire, and, finding all struggles for existence against him, he lead his devoted little band to Asia, fleeing the sterile and unpromising land of his forefathers.

Mr. McAllan substantially makes other interesting and unique discoveries, which to thoroughly understand necessitates not a reading but a careful study of his works. No library on America Archaeology is complete without the works of Mr. McAllan.

ANCIENT EGYPT.

MacMillan & Co. London and New York. Yearly 1 s.—post free. Quarterly 2 c.—from the British School of Archaeology, University College, London.

The first number of the new Egyptological Journal entitled "Ancient Egypt" edited by Professor Flinders Petrie F. R. S. and published by the Britsh School of Archaeology in Egypt, which has numerous subscribers in the United States, indicates that this magazine will supply a long felt want.

It contains four full paged plates, one of these excellently printed in colors, depicting newly discovered specimens of ancient Egyptian Jewelery; also some twelve articles upon Egyptian antiquity fully illustrated. Of these, perhaps, the most interesting and novel is one by Professor P. E. Newberry upon "Egyptian Nome Ensigns and their Historical Significance" in which he endeavors to trace the racial connections of the tribes who must, from this evidence, have occupied some of the provinces or counties of lower Egypt, chiefly in the Delta, before the invasion of the conquering people, under Menes, whose head tribe had the hawk, or falcon for symbolic totem.

The so-called ensign were really the military guidons; emblems of the brigades of Egypt's territorial army, and progenitors of the symbols carried by the Roman legions. They also had a religious and geographical import of which Professor Newberry has partly treated elsewhere.

In an article upon Egyptian Jewelery Professor Flinders Petrie chiefly describes specimens found by him in a XIIth dynasty tomb at Riggeh, near Meydoun. Of these objects by far the finest is a pectoral or breast ornament made of gold. The back of it is chased, and the face ornamented with camelian lapis lazuli, and turquoises. It is a piece henceforth always to be pictured in future histories of Egyptian Art and a design that will doubtless forthwith be imitated by modern jewelers.

Professor Petrie provides an elaborate essay upon "Egyptian Belief in a Future Life" in which pictures reproducing scenes from monuments and papyri are interspersed. One of

these presents a photograph of one of the many funerary boats found in tombs, the model showing the deceased seated in a shrine upon the deck, and accompanied by the crew.

The Professor considers this barque to represent one in which the defunct could sail after, and join the ship of Ra, the su ngod in the sky. Thus boarding that vessel to henceforth be a passenger amid its gods.

It would appear more probable that these models are magic replicas of the funerary boats in which the mummy had been duly transported across the Nile to the western shore. Or else, and perhaps more frequently were intended for copies of the craft by which the corpse had been conveyed along the Nile, to be buried beside Osiris, at Abydos, a place of sepulchre that would insure the departed a fortunate future.

Professor Petrie mentions that some of these funerary boat models are rigged as for sailing up-stream, while others have the sails and gear arranged for descending it. This appears to show that they in these cases really are intended as symbolic of one of the Nile mummy fleet bound for Abydos. Because an Egyptian who died above that sacred site sailed for his last home down stream; whilst those who were mummyfied below it, were brought up the river, or if the voyage could not be afforded and a costly Abydos tomb provided, a model boat placed in the grave suggesting that they had been accomplished might be sufficient to obtain the beatitude, the burial beside Osiris should have secured.

Another imporant article in the journal concerns the representations of boats upon the very early prehistoric pottery. Some Egyptologists have argued that these designs are really intended for a fortified village, showing as distinguishing mark thereof the shrine and totem pole of its local deity. In that case the lines formerly supposed to indicate the oars are the abattis of the surrounding protective zareeba.

Professor Petrie selects three of these pictorgraphs showing at the ends of the boat the tying up rope, and steering oar, also a fourth illustration upon a vase recently acquired by him, which depicts an object of precisely similar shape to these boats and upon which stand four boatmen, most unmistakably punting it along.

It is possible, however, that some very similar designs are intended for priestly village shrine, such as are given in fac simile in Mr. Quibell's "Hieraconopolis" plate LXXVI, which

apparently shows a vamp with ascending steps. A copy of this drawing may be seen in M. Gustave Jequier's little work "Historie de le Civilization Egyptienne." Professor gives a curious solution of the origin of the mysterious Pharoah name Zet whose title occurs in a series of excerpts from Manetho's list of kings of Egypt, which banishes that monarch from history. It is that a marginal note in Greek commencing with Zet, such as Zetio, "look it up," "search after or query" crept into the text.

ROMAN FARM MANAGEMENT

Cato-Varro

By A Virginia Farmer

The MacMillan Co., 1913—$2.00 Net.

It seems that the gentleman who calls himself A Virginia Farmer is an exception to the general run of Southern planters. He chooses a peculiar subject, yet one in which millions of American are interested,—Farm Management.

The work is a free translation from Cato and Varro. The author does not attempt a translation for text-book use, but a translation that hides the fact that it is a translation.

The notes are cleverly written and adaptable to the subject. They are instructive and supplement the text.

Though the Department of Agriculture are flooding the rural districts with literature, yet something can always be learned from the ancients, and here they come forward again with a message to the American farmer.

Any up-to-date agriculturist cannot afford to be without this work upon his shelves.

INTERNATIONAL EXPOSITION OF THE BOOK INDUSTRY AND GRAPHIC ARTS LEIPSIC 1914.

Exhibits are Coming in Rapidly.

The collecting of the Exhibition materials for the International Exposition of the Book Industry and Graphic Arts, which will take place April to November 1914 at the old University town of Leipsic, Germany, goes on very rapidly. A very important part of the Exposition will be the Department of the Exhibits relating to the culture of the human races of all times and nations. From prehistoric times and primitive cultures the plan touches all people who ever lived on earth, up to Gutenberg, the father of the modern printing science, and

to our days. Here the old Chinese and Japan printing processes will be shown in operation. Universities and colleges will be shown in their day work with class exercises, laboratory work and student papers. This part will interest any visitor of the Exhibition. Of no less importance are the different branches of the Book Industry and graphics. One of them will show "The Woman in the Book Industry," another the art of illustration and caricature, lithographics, photography, stenography, colors, wood carvings, book making and book trade, musical exhibits, writing materials, stereotypy, electrotypy, cinematographics, newspapers, advertising, canvassing, libraries, measures for the protection and welfare of the workers. People interested in public school matters will find a rare opportunity to study the development of the child from its first breath up to the time when it leaves the school room. The black children of Australia will show their graphic arts as well as those from Greenland, the United States and Germany.

Sixty-three Classes.

The whole plan of the exhibition is now devided into 63 classes and several hundred groups with a historical and technical department. Models and appartus for demonstrating will be shown. The publications of booksellers and music publishers will be brought directly to the notice of the public through the medium of the libraries and reading rooms, through lectures, public readings, recitations and concert recitals, so that anything in our minds will be under the banner of the "Black Art." Many learned societies and associations connected with the book industry will have their congresses and meetings at the exhibition ground.

An Opportunity for Everybody.

Being under the direct patronage of King Frederick August of Saxony the Exhbition is a rare opportunity for anyone having some regular or irregular things relating to the book industry and graphic arts for exhibition. While many great concerns throughout the world are sending their exhibits, it should not be forgotten, that there is one department not for rent to business-exhibitors, it is open for exposition of exhibition materials, that will constitute afterwards a valuable part of the great Museum of the Book Industry at Leipsic, the only Institution of its kind in the world, when the exhibition is over. Anyone may aid to this department printings, writings, manuscripts, photos, pictures, book and graphics **with no cost to himself.**

Schoolplans and pictures of student classes, professors, teachers and buildings, photos and models of school colleges, universities and publishing houses will still be heartily accepted, likewise drawings, lessons and papers of scholars and students, Authors and publishing houses should send of all books and pamphlets they have published **a good copy with order blanks** so that every exhibition-visitor may have a chance to order the exhibits shown. Also editors should send the best they have. The name of the sender should always be mentioned upon the exhibit. Readers of these lines who have some materials of any kind as mentioned above for this department should direct it to **Herrn Dr. Weise, Ausstellungsaelande, Leipsic, Germany,** who is in charge of this department, and who will send also a short guide if asked for.

Leipsic. Paul D. Hentsch, M. A.

Frederick Starr, of the University of Chicago, has just returned from a three-months' study in Japan and Korea. Sailing from Tacoma on September 1, by the "Mexico Maru," he reached Tokyo on the 19th and for three weeks made that city his headquarters. During that time he finished several pieces of work begun in former expeditions and made the complete circuit of the secred mount, Fuji, an excursion to which five days were given. He then went to Korea, where he was busily occupied from October 19 to November 20. Seoul was headquarters but, with interpreter and helpers, he made trips to Fusan, Torai, Masampo, Taikyu, Kinsen, Suigen, Ansung, Chung Ju, Unjin, and Songdo. In Korea he was interested in Korean life and culture, past and present, and in the problems of Japanese administration. Part of his work was the outlining of a small manual of Korean ethnography which he has in contemplation. In his previous expedition (1911), having seen the "astronomical observatory" of ancient Silla, he was interested in this time visiting the old "observatories" at Suigen, Seoul and Songdo—all of which were visited and photographed. Considerable attention was given to Korean coin-charms and to certain minor arts. The old manasteries of Kun San Sa and Shakuoji were visited. The social, political, and economic conditions were observed particularly with the idea of noticing the progress made during the past two years; on the whole, improvement is evident. A trip was made over the new railroad line (not yet completed) from Seoul to Gensan (Wonsan) on

the east coast. After Professor Starr's return to Japan on November 21, three weeks were devoted to various studies, but particularly to religious and religious art. Of Buddhist sects, Jodo, Shingon, and Nichiren were especially examined. In studying Shinto, a pilgrimage was made to the national shrines at Ise and interesting visits were made to the noted shrines of Atsuta and Hibiya (Tokyo). While too busy to indulge in general lecturing, Professor Starr gave special addresses as follows: Korean Y. M. C. A., Seoul, "If I were a Korean Young Man"; Korean Education Association (Japanese and Korean teachers) Seoul, "Japan's Place in the World"; Men's Club, Gensan, "Korea Japan's Opportunity"; Asiatic Society, of Japan, Tokyo, "Matsuura Takeshiro, the Old Geographer"; English-speaking Club of Waseda University, Tokyo, "Is It Worth While to Hear Foreign Speakers?" Japan Society (founded in memory of H. I. M., the late Emperor), "Things Japanese." Roy F. Barton accompanied the expedition as moving-picture operator, and Hanzo Maibashi as photographer. More than 6,000 feet of film and 300 negatives were made. Professor Starr left Yokohama on December 10 by the "Hong Kong Maru," reaching San Francisco on December 27, and Chicago on December 31.